



Analytical Laboratory

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13339 Hagers Ferry Road
Huntersville, NC 28078-7929
McGuire Nuclear Complex - MG03A2
Phone: 980-875-5245 Fax: 980-875-4349

Order Summary Report

Order Number: J12010043

Customer Name(s): Bill Kennedy, Melonie Martin, Wayne Chapman, Tom Johnson

Customer Address: 3195 Pine Hall Rd
Mailcode: Belews Steam Station
Belews Creek, NC 28012

Lab Contact: Jason C Perkins **Phone:** 980-875-5348

Report Authorized By: _____ **Date:** 1/30/2012
(Signature)

Program Comments:

Please contact the Program Manager (Jason C Perkins) with any questions regarding this report.

Data Flags & Calculations:

Any analytical tests or individual analytes within a test flagged with a Qualifier indicate a deviation from the method quality system or quality control requirement. The qualifier description is found at the end of the Certificate of Analysis (sample results) under the qualifiers heading. All results are reported on a dry weight basis unless otherwise noted.

Data Package:

This data package includes analytical results that are applicable only to the samples described in this narrative. An estimation of the uncertainty of measurement for the results in the report is available upon request. This report shall not be reproduced, except in full, without the written consent of the Analytical Laboratory. Please contact the Analytical laboratory with any questions. The order of individual sections within this report is as follows:

Job Summary Report, Sample Identification, Technical Validation of Data Package, Analytical Laboratory Certificate of Analysis, Analytical Laboratory QC Reports, Sub-contracted Laboratory Results, Customer Specific Data Sheets, Reports & Documentation, Customer Database Entries, Test Case Narratives, Chain of Custody (COC)

Certification:

The Analytical Laboratory holds the following State Certifications : North Carolina (DENR) Certificate #248, South Carolina (DHEC) Laboratory ID # 99005. Contact the Analytical Laboratory for definitive information about the certification status of specific methods.

Sample ID's & Descriptions:

Sample ID	Plant/Station	Collection Date and Time	Collected By	Sample Description
2012000166	BELEWS	11-Jan-12 9:00 AM	D MATHESON	FGD Purge Eff
2012000167	BELEWS	11-Jan-12 9:00 AM	D MATHESON	EQ TANK EFF.
2012000168	BELEWS	11-Jan-12 9:00 AM	D MATHESON	BIOREACTOR 1 INF.
2012000169	BELEWS	11-Jan-12 9:00 AM	D MATHESON	BIOREACTOR 2 INF.
2012000170	BELEWS	11-Jan-12 9:00 AM	D MATHESON	BIOREACTOR 2 EFF.
2012000179	BELEWS	11-Jan-12 9:00 AM	D MATHESON	FILTER BLANK
2012000194	BELEWS	11-Jan-12 9:00 AM	D MATHESON	Trip Blank
2012000195	BELEWS	11-Jan-12 1:40 PM	David Morris (Prism)	BIOREACTOR 1 INF.
2012000196	BELEWS	11-Jan-12 1:40 PM	David Morris (Prism)	BIOREACTOR 1 INF. BLANK
2012000197	BELEWS	11-Jan-12 1:50 PM	David Morris (Prism)	BIOREACTOR 2 INF.
2012000198	BELEWS	11-Jan-12 1:50 PM	David Morris (Prism)	BIOREACTOR 2 INF. BLANK
2012000199	BELEWS	11-Jan-12 1:45 PM	David Morris (Prism)	BIOREACTOR 2 EFF.
2012000200	BELEWS	11-Jan-12 1:45 PM	David Morris (Prism)	BIOREACTOR 2 EFF. BLANK
13 Total Samples				

Technical Validation Review

Checklist:

COC and .pdf report are in agreement with sample totals and analyses (compliance programs and procedures).

☒ Yes

☐ No

All Results are less than the laboratory reporting limits.

☐ Yes

☒ No

All laboratory QA/QC requirements are acceptable.

☒ Yes

☐ No

The Vendor Laboratories have been qualified by the Analytical Laboratory

Yes

Report Sections Included:

☒ Job Summary Report

☒ Sample Identification

☒ Technical Validation of Data Package

☒ Analytical Laboratory Certificate of Analysis

☐ Analytical Laboratory QC Report

☒ Sub-contracted Laboratory Results

☐ Customer Specific Data Sheets, Reports, & Documentation

☐ Customer Database Entries

☒ Chain of Custody

☒ Electronic Data Deliverable (EDD) Sent Separately

Reviewed By: DataBase Administrator

Date: 1/30/2012

Certificate of Laboratory Analysis

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Order # J12010043

Site: FGD Purge Eff

Collection Date: 11-Jan-12 9:00 AM

Sample #: 2012000166

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>INORGANIC IONS BY IC</u>							
Bromide	80	mg/L		5	EPA 300.0	14-Jan-12 00:42	JAHERMA
<u>MERCURY (COLD VAPOR) IN WATER</u>							
Mercury (Hg)	148	ug/L		5	EPA 245.1	13-Jan-12 10:04	AGIBBS
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	149	mg/L		0.5	EPA 200.7	17-Jan-12 12:16	MHH7131
<u>DISSOLVED METALS BY ICP-MS</u>							
Selenium (Se)	164	ug/L		10	EPA 200.8	13-Jan-12 14:32	KRICHAR
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	172	ug/L		10	EPA 200.8	17-Jan-12 12:04	DJSULL1
Chromium (Cr)	144	ug/L		10	EPA 200.8	17-Jan-12 12:04	DJSULL1
Copper (Cu)	78.2	ug/L		10	EPA 200.8	17-Jan-12 12:04	DJSULL1
Nickel (Ni)	128	ug/L		10	EPA 200.8	17-Jan-12 12:04	DJSULL1
Selenium (Se)	3740	ug/L		10	EPA 200.8	17-Jan-12 12:04	DJSULL1
Silver (Ag)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:04	DJSULL1
Zinc (Zn)	144	ug/L		20	EPA 200.8	17-Jan-12 12:04	DJSULL1
<u>Arsenic Speciation</u>							
Vendor Parameter	COMPLETE				V_AS&C		
<u>TOTAL DISSOLVED SOLIDS</u>							
TDS	13000	mg/L		200	SM2540C	16-Jan-12 16:10	TJA7067

Site: EQ TANK EFF.

Collection Date: 11-Jan-12 9:00 AM

Sample #: 2012000167

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>MERCURY (COLD VAPOR) IN WATER</u>							
Mercury (Hg)	139	ug/L		2.5	EPA 245.1	13-Jan-12 10:06	AGIBBS
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	147	mg/L		0.5	EPA 200.7	17-Jan-12 12:20	MHH7131
<u>DISSOLVED METALS BY ICP-MS</u>							
Selenium (Se)	128	ug/L		10	EPA 200.8	13-Jan-12 14:35	KRICHAR

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*This report shall not be reproduced, except in full.***Order # J12010043**

Site: EQ TANK EFF.

Collection Date: 11-Jan-12 9:00 AM

Sample #: 2012000167

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	156	ug/L		10	EPA 200.8	17-Jan-12 12:07	DJSULL1
Chromium (Cr)	129	ug/L		10	EPA 200.8	17-Jan-12 12:07	DJSULL1
Copper (Cu)	69.5	ug/L		10	EPA 200.8	17-Jan-12 12:07	DJSULL1
Nickel (Ni)	118	ug/L		10	EPA 200.8	17-Jan-12 12:07	DJSULL1
Selenium (Se)	3700	ug/L		10	EPA 200.8	17-Jan-12 12:07	DJSULL1
Silver (Ag)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:07	DJSULL1
Zinc (Zn)	133	ug/L		20	EPA 200.8	17-Jan-12 12:07	DJSULL1

Site: BIOREACTOR 1 INF.

Collection Date: 11-Jan-12 9:00 AM

Sample #: 2012000168

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	136	mg/L		0.5	EPA 200.7	17-Jan-12 12:24	MHH7131
<u>DISSOLVED METALS BY ICP-MS</u>							
Selenium (Se)	110	ug/L		10	EPA 200.8	13-Jan-12 14:38	KRICHAR
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:10	DJSULL1
Chromium (Cr)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:10	DJSULL1
Copper (Cu)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:10	DJSULL1
Nickel (Ni)	18.5	ug/L		10	EPA 200.8	17-Jan-12 12:10	DJSULL1
Selenium (Se)	123	ug/L		10	EPA 200.8	17-Jan-12 12:10	DJSULL1
Silver (Ag)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:10	DJSULL1
Zinc (Zn)	< 20	ug/L		20	EPA 200.8	17-Jan-12 12:10	DJSULL1

Arsenic Speciation

Vendor Parameter

COMPLETE

V_AS&C

Site: BIOREACTOR 2 INF.

Collection Date: 11-Jan-12 9:00 AM

Sample #: 2012000169

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	130	mg/L		0.5	EPA 200.7	17-Jan-12 12:28	MHH7131

Certificate of Laboratory Analysis

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Site: BIOREACTOR 2 INF.

Collection Date: 11-Jan-12 9:00 AM

Sample #: 2012000169

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:13	DJSULL1
Chromium (Cr)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:13	DJSULL1
Copper (Cu)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:13	DJSULL1
Nickel (Ni)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:13	DJSULL1
Selenium (Se)	17.8	ug/L		10	EPA 200.8	17-Jan-12 12:13	DJSULL1
Silver (Ag)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:13	DJSULL1
Zinc (Zn)	< 20	ug/L		20	EPA 200.8	17-Jan-12 12:13	DJSULL1

Site: BIOREACTOR 2 EFF.

Collection Date: 11-Jan-12 9:00 AM

Sample #: 2012000170

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>INORGANIC IONS BY IC</u>							
Bromide	78	mg/L		5	EPA 300.0	14-Jan-12 00:58	JAHERMA
<u>MERCURY (COLD VAPOR) IN WATER</u>							
Mercury (Hg)	< 1	ug/L		1	EPA 245.1	13-Jan-12 10:09	AGIBBS
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	123	mg/L		0.5	EPA 200.7	17-Jan-12 12:32	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:16	DJSULL1
Chromium (Cr)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:16	DJSULL1
Copper (Cu)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:16	DJSULL1
Nickel (Ni)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:16	DJSULL1
Selenium (Se)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:16	DJSULL1
Silver (Ag)	< 10	ug/L		10	EPA 200.8	17-Jan-12 12:16	DJSULL1
Zinc (Zn)	< 20	ug/L		20	EPA 200.8	17-Jan-12 12:16	DJSULL1

Arsenic Speciation

Vendor Parameter

COMPLETE

V_AS&C

Site: FILTER BLANK

Collection Date: 11-Jan-12 9:00 AM

Sample #: 2012000179

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>DISSOLVED METALS BY ICP-MS</u>							
Selenium (Se)	< 1	ug/L		1	EPA 200.8	13-Jan-12 14:01	KRICAR

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Order # J12010043

Site: Trip Blank

Collection Date: 11-Jan-12 9:00 AM

Sample #: 2012000194

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	< 0.05	mg/L		0.05	EPA 200.7	17-Jan-12 11:37	MHH7131
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	< 1	ug/L		1	EPA 200.8	17-Jan-12 11:24	DJSULL1
Chromium (Cr)	< 1	ug/L		1	EPA 200.8	17-Jan-12 11:24	DJSULL1
Copper (Cu)	< 1	ug/L		1	EPA 200.8	17-Jan-12 11:24	DJSULL1
Nickel (Ni)	< 1	ug/L		1	EPA 200.8	17-Jan-12 11:24	DJSULL1
Selenium (Se)	< 1	ug/L		1	EPA 200.8	17-Jan-12 11:24	DJSULL1
Silver (Ag)	< 1	ug/L		1	EPA 200.8	17-Jan-12 11:24	DJSULL1
Zinc (Zn)	< 2	ug/L		2	EPA 200.8	17-Jan-12 11:24	DJSULL1

Arsenic Speciation

Vendor Parameter **COMPLETE** V_AS&C

Site: BIOREACTOR 1 INF.

Collection Date: 11-Jan-12 1:40 PM

Sample #: 2012000195

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631</u>							
Vendor Parameter	COMPLETE				V_BRAND		

Site: BIOREACTOR 1 INF. BLANK

Collection Date: 11-Jan-12 1:40 PM

Sample #: 2012000196

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631</u>							
Vendor Parameter	COMPLETE				V_BRAND		

Site: BIOREACTOR 2 INF.

Collection Date: 11-Jan-12 1:50 PM

Sample #: 2012000197

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631</u>							
Vendor Parameter	COMPLETE				V_BRAND		

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Order # J12010043

Site: BIOREACTOR 2 INF. BLANK

Collection Date: 11-Jan-12 1:50 PM

Sample #: 2012000198

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631</u>							
Vendor Parameter	COMPLETE				V_BRAND		

Site: BIOREACTOR 2 EFF.

Collection Date: 11-Jan-12 1:45 PM

Sample #: 2012000199

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631</u>							
Vendor Parameter	COMPLETE				V_BRAND		

Site: BIOREACTOR 2 EFF. BLANK

Collection Date: 11-Jan-12 1:45 PM

Sample #: 2012000200

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631</u>							
Mercury (Hg)	< 1	ng/L		1	V_BRAND		

January 20, 2012

Duke Energy
ATTN: Jay Perkins
Scientific Support-Laboratory
13339 Hagers Ferry Road
Huntersville NC 28078
jcperkins@duke-energy.com
labcustomer@duke-energy.com

RE: Project DUK-HV1201

Client Project: J12010043

Dear Mr. Perkins,

On January 13, 2012, Brooks Rand Labs (BRL) received three (3) wastewater samples and three (3) corresponding field blanks. Samples were logged-in for total mercury (Hg) analysis. All samples were received, prepared, analyzed, and stored according to BRL SOPs and EPA methodology.

The results were blank-corrected as described in the calculations section of the applicable SOP(s) and may be evaluated using adjusted reporting limits to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific detection limits and other details.

No qualification of the data was warranted, aside from concentration qualifiers, and all associated quality control sample results met the acceptance criteria.

BRL, an accredited laboratory, certifies the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more details, see the *Report Information* page of the report. Please feel free to contact me if you have any questions regarding this report.

Sincerely,



Tiffany Stilwater
Project Manager
tiffany@brooksrand.com

Report Information

Laboratory Accreditation

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksrand.com/default.asp?contentID=586>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

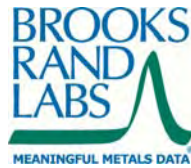
BLK	method blank	MS	matrix spike
BRL	Brooks Rand Labs	MSD	matrix spike duplicate
BS	laboratory fortified blank	ND	non-detect
CAL	calibration standard	NR	non-reportable
CCV	continuing calibration verification	PS	post preparation spike
COC	chain of custody record	REC	percent recovery
CRM	certified reference material	RPD	relative percent difference
D	dissolved fraction	RSD	relative standard deviation
DUP	duplicate	SCV	secondary calibration verification
ICV	initial calibration verification	SOP	standard operating procedure
MDL	method detection limit	SRM	standard reference material
MRL	method reporting limit	T	total recoverable fraction

Definition of Data Qualifiers

(Effective 9/23/09)

B	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Result is estimated.
J	Estimated value. A full explanation is presented in the narrative.
J-M	Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N	Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M	Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N	Spike recovery was not within acceptance criteria. Result is estimated.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand, Ltd., those found in the EPA SOW_ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses; USEPA; July 2002. These supersede all previous qualifiers ever employed by BRL.

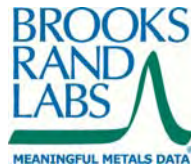


Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
BioReactor 1 Inf	1202028-01	Influent	Sample	01/11/2012	01/13/2012
Hg Blk BioReactor 1 Inf	1202028-02	DIW	Field Blank	01/11/2012	01/13/2012
BioReactor 2 Inf	1202028-03	Influent	QC Sample	01/11/2012	01/13/2012
Hg Blk BioReactor 2 Inf	1202028-04	DIW	Field Blank	01/11/2012	01/13/2012
BioReactor 2 Eff	1202028-05	Effluent	Sample	01/11/2012	01/13/2012
Hg Blk BioReactor 2 Eff	1202028-06	DIW	Field Blank	01/11/2012	01/13/2012

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
Hg	Water	EPA 1631	01/13/2012	01/16/2012	B120059	1200034



Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
BioReactor 1 Inf										
1202028-01	Hg	Influent	T	245		15.3	40.8	ng/L	B120059	1200034
BioReactor 2 Eff										
1202028-05	Hg	Effluent	T	50.2		3.06	8.16	ng/L	B120059	1200034
BioReactor 2 Inf										
1202028-03	Hg	Influent	T	87.3		1.53	4.08	ng/L	B120059	1200034
Hg Blk BioReactor 1 Inf										
1202028-02	Hg	DIW	T	0.15	U	0.15	0.40	ng/L	B120059	1200034
Hg Blk BioReactor 2 Eff										
1202028-06	Hg	DIW	T	0.15	U	0.15	0.40	ng/L	B120059	1200034
Hg Blk BioReactor 2 Inf										
1202028-04	Hg	DIW	T	0.15	U	0.15	0.41	ng/L	B120059	1200034

Accuracy & Precision Summary

Batch: B120059
Lab Matrix: Water
Method: EPA 1631

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B120059-SRM1	Certified Reference Material (1153040, NIST 1641d 1000x dilution)						
	Hg		15.68	15.36	ng/L	98% 85-115	
B120059-MS2	Matrix Spike (1202028-03)						
	Hg	87.34	408.2	494.3	ng/L	100% 71-125	
B120059-MSD2	Matrix Spike Duplicate (1202028-03)						
	Hg	87.34	408.2	503.6	ng/L	102% 71-125	2% 24

Method Blanks & Reporting Limits

Batch: B120059
Matrix: Water
Method: EPA 1631
Analyte: Hg

Sample	Result	Units
B120059-BLK1	0.03	ng/L
B120059-BLK2	0.04	ng/L
B120059-BLK3	0.05	ng/L
B120059-BLK4	0.03	ng/L
Average: 0.04		Standard Deviation: 0.01
Limit: 0.50		Limit: 0.10
		MDL: 0.15
		MRL: 0.40

Instrument Calibration

Sequence: 1200034
Instrument: THG-05
Date: 01/16/2012
Analyte: Hg

Total Mercury and Mercury Speciation by CVAFS
Method: EPA 1631

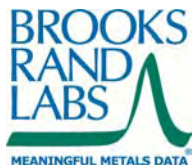
Lab ID	True Value	Result	Units	REC & Limits	
1200034-IBL2		7.74	pg of Hg		
1200034-IBL3		4.83	pg of Hg		
1200034-IBL4		4.45	pg of Hg		
1200034-CAL1	25.00	27.74	pg of Hg	111%	
1200034-CAL2	100.0	99.92	pg of Hg	100%	
1200034-CAL3	500.0	472.7	pg of Hg	95%	
1200034-IBL1		4.17	pg of Hg		
1200034-CAL4	2500	2473	pg of Hg	99%	
1200034-CAL5	10000	9718	pg of Hg	97%	
1200034-ICV1	1568	1536	pg of Hg	98%	85-115
1200034-CCB1		14.5	pg of Hg		
1200034-CCV1	500.0	473.3	pg of Hg	95%	77-123
1200034-CCV2	500.0	460.0	pg of Hg	92%	77-123



Sample Containers

Lab ID: 1202028-01		Report Matrix: Influent		Collected: 01/11/2012	
Sample: BioReactor 1 Inf		Sample Type: Sample		Received: 01/13/2012	
Des	Container	Size	Lot	Preservation	P-Lot
A	Bottle FLPE Hg-T	250 mL	71470160	none	n/a
			10		
Lab ID: 1202028-02		Report Matrix: DIW		Collected: 01/11/2012	
Sample: Hg Blk BioReactor 1 Inf		Sample Type: Field Blank		Received: 01/13/2012	
Des	Container	Size	Lot	Preservation	P-Lot
A	Bottle FLPE Hg-T	250 mL	71470160	none	n/a
			10		
Lab ID: 1202028-03		Report Matrix: Influent		Collected: 01/11/2012	
Sample: BioReactor 2 Inf		Sample Type: QC Sample		Received: 01/13/2012	
Des	Container	Size	Lot	Preservation	P-Lot
A	Bottle FLPE Hg-T	250 mL	71470160	none	n/a
			10		
Lab ID: 1202028-04		Report Matrix: DIW		Collected: 01/11/2012	
Sample: Hg Blk BioReactor 2 Inf		Sample Type: Field Blank		Received: 01/13/2012	
Des	Container	Size	Lot	Preservation	P-Lot
A	Bottle FLPE Hg-T	250 mL	71470160	none	n/a
			10		
Lab ID: 1202028-05		Report Matrix: Effluent		Collected: 01/11/2012	
Sample: BioReactor 2 Eff		Sample Type: Sample		Received: 01/13/2012	
Des	Container	Size	Lot	Preservation	P-Lot
A	Bottle FLPE Hg-T	250 mL	71470160	none	n/a
			10		
Lab ID: 1202028-06		Report Matrix: DIW		Collected: 01/11/2012	
Sample: Hg Blk BioReactor 2 Eff		Sample Type: Field Blank		Received: 01/13/2012	
Des	Container	Size	Lot	Preservation	P-Lot
A	Bottle FLPE Hg-T	250 mL	71470160	none	n/a
			10		

Project ID: DUK-HV1201
PM: Tiffany Stilwater



Page 16 of 27
Client PM: Jay Perkins
Client PO: ISW01.1946

Shipping Containers

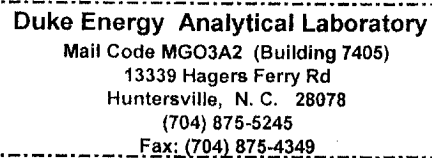
Cooler

Received: January 13, 2012 10:00
Tracking No: 4726 7966 7371 via FedEx
Coolant Type: Ice
Temperature: 3.9 °C

Description: Cooler
Damaged in transit? No
Returned to client? No

Custody seals present? No
Custody seals intact? No
COC present? Yes

LO2028



ORDER # J120/0043	Sample Class OTHER	Samples Originating From NC _____ SC _____	Page _____
Logged By cpt	Date & Time 1-12-12 0707	SAMPLE PROGRAM Water _____ _____ Drinking Water _____ UST _____ _____ RCRA Waste	Ground NPDES _____
Brooks Rand ICW/01.1046	Cooler Temp (C)		

Page 2 of 2
DISTRIBUTION
ORIGINAL to LAB,
COPY to CLIENT

1)Project Name	Belews - FGD WWTS (2011, Bi-Weekly Sampling)		2)Phone No:
2) Client:	Bill Kennedy, Melonie Martin, Wayne Chapman, Tom Johnson *		4)Fax No:
5)Business Unit:	6)Process:	Mail Code:	
8)Oper. Unit:	9)Res. Type:	10)Reso. Center:	

ISW01.1940		Cooler Temp (C)		Preserv.: 1=HCL 2=H ₂ SO ₄ 3=HNO ₃ 4=Ice 5=None		5	
MR #		Analyses Required		16		17	
Customer to complete all appropriate non-shaded areas.		18		19		20	
Sampling conducted: 2nd Wednesday each month		Comp.		Grab		Fig 1631 (sample 2nd week only)	
Date	Time	Signature					
11-12	1340	Dan Mori		X		1	
	↓					1	
	1350					1	
	↓					1	
	1345					1	
	↓					1	
Use the Bioreactor 2 Inf or EFF sample as the MS/MSD							

LAB USE ONLY	
¹¹ Lab ID	
012000195	
196	
197	
198	
199	
200	

Se Speciation Bottle ID	¹³ Sample Description or ID
	BioReactor 1 Inf
	Hg Blk BioReactor 1 Inf
	BioReactor 2 Inf
	Hg Blk BioReactor 2 Inf
	BioReactor 2 Eff
	Hg Blk BioReactor 2 Eff

[illegible][illegible]

1) Relinquished By	<i>David M...</i>	<i>1-11-12</i>	<i>1535</i>
3) Relinquished By		Date/Time	
5) Relinquished By		Date/Time	
7) Relinquished By	<i>gpk</i>	<i>1-12-12</i>	Date/Time
9) Seal/Locked By	<i>gpk</i>	<i>1-12-12</i>	Date/Time
11) Seal/Locked By		Date/Time	
Comments			
<p>* Metals=As, Ag, B, Cu, Cr, Ni, Se, Zn *thomas.d.joh</p>			

2) Accepted By:	Cindy Knox 1-11-12 1535
4) Accepted By:	[Signature] 1/13/12 1800
6) Accepted By:	
8) Accepted By:	
10) Seal/Lock Opened By	
12) Seal/Lock Opened By	

anson@siemens.com

Customer, IMPORTANT!
Please indicate desired turnaround.

²²Requested Turnaround

14 Days _____

*7 Days _____

*48 Hr _____

*Other _____

* Add. Cost Will Apply

1-19-12



**APPLIED SPECIATION
AND CONSULTING, LLC**

18804 Northcreek Parkway Bothell, WA, 98011
Tel: (425) 483-3300 Fax: (425) 483-9818
www.appliedspeciation.com

January 25, 2012

Jay Perkins
Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd.
Huntersville, NC 28078
(704) 875-5245

Project: Belews – FGD WWTS Bi-Monthly Sampling) (LIMS # J12010043)

Dear Mr. Perkins,

Attached is the report associated with four (4) aqueous samples submitted for selenium speciation analysis on January 12, 2012. The samples were received in a sealed cooler at -0.3°C on January 13, 2012. Selenium speciation analysis was performed via ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS). Any issues associated with the analysis are addressed in the following report.

If you have any questions, please feel free to contact me at your convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Gerads", written over a light blue horizontal line.

Russell Gerads
Vice President
Applied Speciation and Consulting, LLC

Applied Speciation and Consulting, LLC

Report prepared for:

Jay Perkins
Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd.
Huntersville, NC 28078

Project: Belews – FGD WWTS Bi-Monthly Sampling) (LIMS # J12010043)

January 25, 2012

1. Sample Reception

Four (4) aqueous samples in 125mL HDPE bottles (provided by Applied Speciation and Consulting) were submitted for selenium speciation analysis on January 12, 2012. The samples were received on January 13, 2012 in a sealed container at -0.3°C.

The samples were received in a laminar flow clean hood, void of trace metals contamination and ultra-violet radiation, and was designated a discrete sample identifier. An aliquot of each sample was filtered (0.45µm) and each filtrate was stored in a secure, monitored cryofreezer (maintained at a temperature of -80°C) until selenium speciation analysis could be performed via ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS).

2. Sample Preparation

All sample preparation is performed in laminar flow clean hoods known to be free from trace metals contamination. All applied water for dilutions and sample preservatives are monitored for contamination to account for any biases associated with the sample results.

Selenium Speciation Analysis by IC-ICP-DRC-MS Prior to analysis, an aliquot of each sample was filtered with a syringe filter (0.45µm) and injected directly into a sealed autosampler vial. No further sample preparation was performed as any chemical alteration of a sample may shift the equilibrium of the system, resulting in changes in speciation ratios.

3. Sample Analysis

All sample analysis is preceded by a minimum of a five-point calibration curve spanning the entire concentration range of interest. Calibration curves are performed at the beginning of

each analytical day. All calibration curves, associated with each species of interest, are standardized by linear regression resulting in a response factor. All sample results are **instrument blank corrected** to account for any operational biases associated with the analytical platform.

Prior to sample analysis, all calibration curves are verified using second source standards which are identified as initial calibration verification standards (ICV).

Ongoing instrument performance is identified by the analysis of continuing calibration verification standards (CCV) and continuing calibration blanks (CCB) at a minimal interval of every ten analytical runs.

Selenium Speciation Analysis by IC-ICP-DRC-MS Each sample for selenium speciation analysis was analyzed by ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS) on January 20, 2012. An aliquot of each sample is injected onto an anion exchange column and mobilized by a basic ($\text{pH} > 7$) gradient. The eluting selenium species are then introduced into a radio frequency (RF) plasma where energy-transfer processes cause desolvation, atomization, and ionization. The ions are extracted from the plasma through a differentially-pumped vacuum interface and travel through a pressurized chamber (DRC) containing a specific reactive gas which preferentially reacts with interfering ions of the same target mass to charge ratios (m/z). A solid-state detector detects ions transmitted through the mass analyzer and the resulting current is processed by a data handling system.

Retention times for each eluting species are compared to known standards for species identification.

4. Analytical Issues

The overall analyses went well and no significant analytical issues were encountered. All quality control parameters associated with this sample were within acceptance limits.

The estimated method detection limits (eMDLs) for selenite, selenate, and selenocyanate are generated from replicate analyses of the lowest standard in the calibration curve. Not all selenium species are present in preparation blanks; therefore, eMDL calculations based on preparation blanks are artificially biased low.

The eMDL for methylseleninic acid and selenomethionine is calculated from the average eMDL of selenite, selenate, and selenocyanate. The calibration does not contain methylseleninic acid or selenomethionine due to impurities in these standards which would bias the results for other selenium species.

If you have any questions or concerns regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Russell Gerads', with a stylized, flowing script.

Russell Gerads
Vice President
Applied Speciation and Consulting, LLC

Selenium Speciation Results for Duke Energy
 Project Name: Belews - FGD WWTS Bi-Monthly Sampling)
 Contact: Jay Perkins
 LIMS #J12010043

Date: January 25, 2012
 Report Generated by: Russell Gerads
 Applied Speciation and Consulting, LLC

Sample Results

Sample ID	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMe	Unknown Se Species (n)
FGD Purge Eff	73.4	68.9	ND (<4.7)	ND (<3.5)	ND (<3.5)	0 (0)
BioReactor 1 Inf	26.3	65.7	ND (<1.2)	2.0	ND (<0.86)	0 (0)
BioReactor 2 Eff	ND (<0.60)	ND (<0.81)	ND (<1.2)	ND (<0.86)	ND (<0.86)	0 (0)
Metals Trip Blk	ND (<0.12)	ND (<0.16)	ND (<0.24)	ND (<0.17)	ND (<0.17)	0 (0)

All results reflect the applied dilution and are reported in µg/L

ND = Not detected at the applied dilution

SeCN = Selenocyanate

MeSe(IV) = Methylseleninic acid

SeMe = Selenomethionine

Unknown Se Species = Total concentration of all unknown Se species observed by IC-ICP-MS

n = number of unknown Se species observed

Selenium Speciation Results for Duke Energy
 Project Name: Belews - FGD WWTS Bi-Monthly Sampling)
 Contact: Jay Perkins
 LIMS #J12010043

Date: January 25, 2012
 Report Generated by: Russell Gerads
 Applied Speciation and Consulting, LLC

Quality Control Summary - Preparation Blank Summary

Analyte (µg/L)	PBW1	PBW2	PBW3	PBW4	Mean	StdDev	eMDL*	eMDL 10x	eMDL 50x	eMDL 200x
Se(IV)	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.12	0.60	2.4
Se(VI)	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.16	0.81	3.2
SeCN	0.000	0.000	0.000	0.000	0.000	0.000	0.024	0.24	1.2	4.7
MeSe(IV)	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.17	0.86	3.5
SeMe	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.17	0.86	3.5

eMDL = Estimated Method Detection Limit

*Please see narrative regarding eMDL calculations

Quality Control Summary - Certified Reference Materials

Analyte (µg/L)	CRM	True Value	Result	Recovery
Se(IV)	LCS	9.57	9.38	98.0
Se(VI)	LCS	9.48	8.97	94.6
SeCN	LCS	8.92	8.80	98.6
MeSe(IV)	LCS	6.47	6.80	105.0
SeMe	LCS	9.32	9.76	104.7

Selenium Speciation Results for Duke Energy
 Project Name: Belews - FGD WWTS Bi-Monthly Sampling)
 Contact: Jay Perkins
 LIMS #J12010043

Date: January 25, 2012
 Report Generated by: Russell Gerads
 Applied Speciation and Consulting, LLC

Quality Control Summary - Matrix Duplicates

Analyte (µg/L)	Sample ID	Rep 1	Rep 2	Mean	RPD
Se(IV)	Batch QC	147.8	146.8	147.3	0.7
Se(VI)	Batch QC	57.3	60.1	58.7	4.8
SeCN	Batch QC	ND (<4.7)	ND (<4.7)	NC	NC
MeSe(IV)	Batch QC	5.2	3.5	4.3	37.9*
SeMe	Batch QC	ND (<3.5)	ND (<3.5)	NC	NC

ND = Not detected at the applied dilution

NC = Value was not calculated due to one or more concentrations below the eMDL

*Sample concentration is within 10x the eMDL

Quality Control Summary - Matrix Spike/ Matrix Spike Duplicate

Analyte (µg/L)	Sample ID	Spike Conc	MS Result	Recovery	Spike Conc	MSD Result	Recovery	RPD
Se(IV)	Batch QC	1112	1303	104.0	1112	1315	105.0	0.9
Se(VI)	Batch QC	1009	1036	96.9	1009	1054	98.7	1.7
SeCN	Batch QC	915.0	654.9	71.6	915.0	675.1	73.8	3.0



Duke Energy Analytical Laboratory

Mail Code MCO3A2 (Building 7405)

13339 Hagers Ferry Rd
Huntersville, N.C. 28078

(704) 875-5245
Fax: (704) 875-4349

Customer must Complete

1) Project Name	Bellevue - FGD		2) Phone No.
3) Client	WWTS Bi-Monthly Sampling)		4) Fax No.
5) Business Unit	Wayne Chapman, Tom Johnson **		6) Mail Code
7) Operator Unit	8) Process	9) Rea. Type	10) Rea. Center

Customer to complete appropriate columns to right

11) Lab ID	Se Speciation Bottle ID	13) Sample Description or ID	Date	Time	Signature	17) Comp.	18) Grab	TDS	Hg - 245.1	Br (Dionex)	Metals*	Se, soluble (no dig.)	Se, speciation - vendor to AS&C (Important to place filled bottle back into both baggies)
169		BioReactor 2 Eff	11/11/12	09:00	Thomas M. Johnson				1	1	1	1	1
169		BioReactor 2 Int	11/11/12	09:00	Thomas M. Johnson				1	1	1	1	1
169		BioReactor 2 Eff	11/11/12	09:00	Thomas M. Johnson				1	1	1	1	1
169		Filter Bik	11/11/12	09:00	Thomas M. Johnson				1	1	1	1	1
169		Metals Trip Bik	11/11/12	09:00	Thomas M. Johnson				1	1	1	1	1

Filtering of the Se is performed in the field please provide a filter blank too.

1) Requisitioned By	11/11/12	09:00	2) Accepted By	11/11/12	13:35
3) Requisitioned By	11/11/12	15:35	4) Accepted By	11/11/12	15:35
5) Requisitioned By	11/11/12	15:35	6) Accepted By	11/11/12	15:35
7) Requisitioned By	11/11/12	15:35	8) Accepted By	11/11/12	15:35
9) Seal/locked By	11/11/12	15:35	10) Seal/locked By	11/11/12	15:35
11) Seal/locked By	11/11/12	15:35	12) Seal/locked By	11/11/12	15:35

Comments: * B by ICP As, Cr, Cu, Ni, Se, Ag, Zn by IMS Digestions = TRM thomas.d.johnson@siemens.com

Customer, IMPORTANT! Please indicate desired turnaround.

22) Requested Turnaround

14 Days _____

7 Days _____

48 Hr _____

Other _____

Add Cost Will Apply

1-19-12

Analytical Laboratory Use Only

Page 1 of 2

DISTRIBUTION
ORIGINAL TO LAB,
COPY TO CLIENT

Page 666

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Page 26 of 27

Duke Energy Analytical Laboratory

Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-4349

Customer must Complete

1) Project Name Belews - FGD		2) Phone No:	
2) Client: WWTS Bi-Monthly Sampling)		4) Fax No:	
5) Business Unit:		6) Process:	
8) Oper. Unit:		10) Reso. Center:	
Bill Kennedy, Melonie Martin, Wayne Chapman, Tom Johnson **		Mail Code:	

Analytical Laboratory Use Only

ORDER# 12010043	MATRIX: OTHER	Samples Originating From NC <input checked="" type="checkbox"/> SC <input type="checkbox"/>
Logged By cpr	Date & Time 1-12-12 0707	SAMPLE PROGRAM Water _____ Ground NPDES Drinking Water RCRA Waste _____
Cooler Temp (C) < 1		

¹⁹Page 1 of 2
DISTRIBUTION
ORIGINAL to LAB,
COPY to CLIENT

<div style="border: 1px solid black; padding: 5px; text-align: center;"> Customer to complete all appropriate non-shaded areas. </div>						<div style="border: 1px solid black; padding: 5px; text-align: center;"> Analyses Required </div>		<div style="border: 1px solid black; padding: 5px; text-align: center;"> Se, speciation - vendor to AS&C (Important to place filled bottle back into both baggies) </div>																																										
Sampling conducted: 2nd and 4th Wednesday						17	18	TDS	Hg - 245.1	Br (Dionex)	Metals*	Se, soluble (no dig.)																																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Time</th> <th>Signature</th> </tr> </thead> <tbody> <tr> <td>1/11/12</td> <td>09:00</td> <td>Dean Matheson</td> </tr> <tr> <td>1/11/12</td> <td>09:00</td> <td>Dean Matheson</td> </tr> <tr> <td>1/11/12</td> <td>09:00</td> <td>Dean Matheson</td> </tr> <tr> <td>1/11/12</td> <td>09:00</td> <td>Dean Matheson</td> </tr> <tr> <td>1/11/12</td> <td>09:00</td> <td>Dean Matheson</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>						Date	Time	Signature	1/11/12	09:00	Dean Matheson	1/11/12	09:00	Dean Matheson	1/11/12	09:00	Dean Matheson	1/11/12	09:00	Dean Matheson	1/11/12	09:00	Dean Matheson																											
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Filtering of the Se is performed in the field please provide a filter blank too.																																																		

LAB USE ONLY

¹¹Lab ID

2012000166

167

168

169

170

179

194

Customer to complete appropriate columns to right

ID	¹³ Sample Description or ID
	FGD Purge Eff
	EQ Tank Eff.
	BioReactor 1 Inf
	BioReactor 2 Inf
	BioReactor 2 Eff
	Filter Blk
	Metals Trip Blk

Customer to sign & date below - fill out from left to right.

1) Relinquished By Dean Matheson	Date/Time 1/11/12 09:00	2) Accepted By David Ma	Date/Time 1-11-12 1335
3) Relinquished By David Ma	Date/Time 1-11-12 1535	4) Accepted By Cindy Knox	Date/Time 1-11-12 1535
5) Relinquished By	Date/Time	6) Accepted By	Date/Time
7) Relinquished By cpr	Date/Time 1-12-12	8) Accepted By	Date/Time
9) Seal/Locked By cpr	Date/Time 1-12-12	10) Seal/Lock Opened By	Date/Time
11) Seal/Locked By	Date/Time	12) Seal/Lock Opened By	Date/Time

AVB

AVB

Customer, IMPORTANT!
Please indicate desired turnaround.

²²Requested Turnaround

14 Days _____

*7 Days _____

*48 Hr _____

*Other _____

* Add. Cost Will Apply

1-19-12

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Page 27 of 27



Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-4349

Analytical Laboratory Use Only

ORDER # <i>J12010043</i>	Sample Class OTHER	Samples Originating From NC <input checked="" type="checkbox"/> SC <input type="checkbox"/>
Logged By <i>cpt</i>	Date & Time <i>1-12-12 0700</i>	SAMPLE PROGRAM Water <input type="checkbox"/> Ground NPDES <input type="checkbox"/> Drinking Water <input type="checkbox"/> UST <input type="checkbox"/> RCRA Waste <input type="checkbox"/>
Brooks Rand ISW01.1946		Cooler Temp (C) Preserv.: 1=HCL 2=H ₂ SO ₄ 3=HNO ₃ 4=Ice 5=None

¹⁹Page 2 of 2
DISTRIBUTION
ORIGINAL to LAB,
COPY to CLIENT

Customer must Complete

1) Project Name Belews - FGD WWTS (2011, Bi-Weekly Sampling)	2) Phone No:
2) Client: Bill Kennedy, Melonie Martin, Wayne Chapman, Tom Johnson *	4) Fax No:
5) Business Unit:	6) Process: Mail Code:
8) Oper. Unit:	9) Res. Type: 10) Reso. Center:

MR #	Customer to complete all appropriate non-shaded areas.									
Sampling conducted: 2nd Wednesday each month										
	Date	Time	Signature	17 Comp.	18 Grab	16 Analyses Required				
						Fig 1631 (sample 2nd week only)				
						5				
						1				
						1				
						1				
						1				
						1				
Use the Bioreactor 2 Inf or EFF sample as the MS/MSD										

LAB USE ONLY

¹¹Lab ID

2012000195
196
197
198
199
200

Customer to complete appropriate columns to right

Se Speciation Bottle ID	¹³ Sample Description or ID
	BioReactor 1 Inf
	Hg Blk BioReactor 1 Inf
	BioReactor 2 Inf
	Hg Blk BioReactor 2 Inf
	BioReactor 2 Eff
	Hg Blk BioReactor 2 Eff

Customer to sign & date below - fill out from left to right.

1) Relinquished By <i>Dan Mori</i>	Date/Time <i>1-11-12 1535</i>	2) Accepted By <i>Cindy Knox</i>	Date/Time <i>1-11-12 1535</i>
3) Relinquished By	Date/Time	4) Accepted By	Date/Time
5) Relinquished By	Date/Time	6) Accepted By:	Date/Time
7) Relinquished By <i>cpt</i>	Date/Time <i>1-12-12</i>	8) Accepted By:	Date/Time
9) Seal/Locked By <i>cpt</i>	Date/Time <i>1-12-12</i>	10) Seal/Lock Opened By	Date/Time
11) Seal/Locked By	Date/Time	12) Seal/Lock Opened By	Date/Time

ADB
"

Comments

* Metals=As, Ag, B, Cu, Cr, Ni, Se, Zn *thomas.d.johnson@siemens.com

Customer, IMPORTANT!
Please indicate desired turnaround.

²²Requested Turnaround

14 Days _____

*7 Days _____

*48 Hr _____

*Other _____

* Add. Cost Will Apply

1-19-12